

ABSTRACT

Reactive distillation technology is a merger between the reaction and separation processes in a single process unit. Biodiesel is a methyl ester type fuel made from animal oils and herbs. Biodiesel is classified as a renewable fuel for the production of agricultural products. Production of biodiesel made from cooking oil with reactive distillation method is a method applied renewable begin commercial consumer. This paper contains the Influence of the type of catalyst and the temperature of the biodiesel production process of bulk oil with reactive distillation method. This practicum is done by using raw materials of bulk cooking oil in the ratio of the volume of 1: 3, with the use of three kinds of catalysts are NaOH, KOH, and CaCO₃ as well as three conditions, namely temperature 65°C, 75°C, and 85°C. Best Biodiesel is of variable KOH 75°C which has a light yellow color, with blue burning flame height of 7.2 cm, the density of the density of 0.8732 g / ml and a viscosity of 5.06 cp. From the graph analysis results Gas Chromatography - Mass Spectrometry above can be seen that the largest compound composition is 11-octadecenoic acid, Oleic acid, Elaidic acid, cis-13-octadecenoic acid and trans-13-octadecenoic acid with a concentration of 56.81% and the smallest compound composition Stearic acid is at a concentration of 6.72%.

Key Word: Reactive distillation, Methyl Ester, Catalyst